

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 1

Item ID: D206-667-203RLC Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Aft Crosstube - High 206L / L1 / L3 / L4
 Start Date: 4/13/2015 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 4/13/2015 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 1504-13 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D206-667-243	Rev C (DEO)								
DSI9565	A								

100 Document Control 0.00
 100
 DC
 Doc.Control -USB or Paperwork
 Memo
 Photocopy bluefile and create labels as per D206-667-203 (HG00)

SCRAP

110 BENDING MACHINE - CROSSTUBES 0.00
 110
 CNC Bend 2
 CNC Alpha 160 Bender
 Memo
 Bend tube as per Dwg D206-667-243 using CNC bender program 206L-AF

BC 15/07/07.

P.T.O.

Scrap

10/1

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 2

Item ID: D206-667-203RLC

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N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

NR1

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC15- Crosstube Dimensional Check

0.00

120

QC

Memo

0.00

Quality Control

PTO →

DQA:

Date: 15/07/13



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 15/07/09

Work Order update only ☐

Work Order: 131497	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. D206-667-203RL	Rework ☐	Skid-tube ☐	Crosstube ☒	Water Jet ☐	Engineering ☐
NCR No. 15-5184	Scrap ☒	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator	15-07-08	110	1	Tube overbent in Bender. Wrong program WAS RUN	W. CSU708	Scrap. + destroy.	JTW 15-07-08	BL 15/07/08	PD 15-07-08
Offset/Setup				height is 1.28 over max tolerance		\$839.65			
Process				1/2 span is 1.04 under min tolerance					
Supplier				angle is 1.3 over max tolerance					
Training									
Transport									
Unapproved									

R.C. operator

FAULT CATEGORY

Landing Gear ☒ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☒ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☒ Other Wrong Program used / no Rework operator Error	☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled
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Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 3

Item ID: D206-667-203RLC

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Stop ***NS2***Start Date: 4/13/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

Crosstubes

Crosstubes

Memo

0.00

***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** ,
VERIFIED BY: _____ *****

1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill all (3) top holes. Holes facing inboard. Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243

***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** ,
VERIFIED BY: _____ *****

2- Drill fwd rivet holes using drill Jig DT8787 fwd as per Dwg D206-667-243.
Note: FWD side has 3X top holes facing inboard.

3- C'sink holes as per dwg D206-667-243. Allow rivet to sit below surface to compensate for paint.

4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins. Drill ONLY 2 top holes ONLY plug most bottom hole to prevent accidental drilling. Drill holes and ream using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill only the top (2) holes. Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243

***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** ,
VERIFIED BY: _____ *****

5-Drill aft rivet holes using drill Jig DT8787 aft as per Dwg D206-667-243.

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 4

Item ID: D206-667-203RLC

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N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Drill only the top (2) holes.

***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** ,
VERIFIED BY: _____ *****6- C'sink holes as per dwg D206-667-243. Allow rivet to sit below surface to
compensate for paint.

7- Scribe tube to identify on the inner chamfer in the cuff D# and B#

8-*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***Debur
& Inspect for surface damage. Repair damage within limits as per Dwg D206-
667-243

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.00

Quality Control

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 5

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Revision ID:

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Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00 ***1***

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

0.00

150

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

1- CLEAN CROSSTUBE WITH WASH'N WIPE

170

Outsource process - NDT per QSI038 4.1

0.00

170

Outsource2

Memo

0.00

Outsource process - NDT

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Liquid Penetrant Inspection as per QSI 038Or

Issue P/O: _____

LPI as per ASTM 1417

Level 2 Attach copy of NDT results to work order

180

0.00

180

Packaging

Packaging

Memo

0.00

Packaging

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Ensure copy of NDT results attached to work order.

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 6

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Revision ID:

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Start Date: 4/13/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190

QC5- Inspect part completeness to step on W/O

0.00

1Q0

QC

Memo

0.00

Quality Control

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Ensure results are as per Dwg D206-667-243

194

0.00

1Q4

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

1- PRESSURE WASH AND THEN USE WASH'N WIPE TO CLEAN
CROSSTUBE BEFORE CHEMICAL CONVERSION

196

QC7-Inspect Chemical Conversion Coat

0.00

1Q6

QC

Memo

0.00

Quality Control

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 7

Item ID: D206-667-203RLC

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N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

200

SprayPaint

SprayPaint

Memo

0.00

Spray Painting

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: _____

Finish Time: _____

PAINT:

Start Time: _____

Finish Time: _____

210

QC14- Inspect Spray Paint

0.00

210

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 8

Item ID: D206-667-203RLC

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N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00

220

Crosstubes

Crosstubes

Memo

0.00

INSTALL GROUNDING CLAMP AND SEAL WITH SIKAFLEX AS PER
DWG AND DEO
A/R SIKAFLEX BATCH: _____

1-Abrade mating surfaces of support and crosstube with 180 grit sandpaper,
clean the area with MEK or equivalent as per dwg

2-Install supports with Proseal 890 per D206-667-243 (DEO) and QSI 015
A/R Proseal 890 Batch: _____
EXP: _____

3-Install supports clamps Using Dt9565 as per Dwg D206-667-243
(DEO), Torque to 80-100 IN-LBS.
PROSEAL CURE TIME 72 HOURS:
Start: _____
Finish: _____

4-Install nut plates as per Dwg D206-667-243. Touch-up rivet heads with Imron
paint.

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

1.31497

Page 9

Item ID: D206-667-203RLC

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

240	QC5- Inspect part completeness to step on W/O	0.00							
-----	---	------	--	--	--	--	--	--	--

240

QC	Memo	0.00							
----	------	------	--	--	--	--	--	--	--

Quality Control ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***

250	Pick Kit	0.00							
-----	----------	------	--	--	--	--	--	--	--

250

Packaging	Memo	0.00							
-----------	------	------	--	--	--	--	--	--	--

Packaging

260	QC4- 100% Inspect kits for completeness	0.00							
-----	---	------	--	--	--	--	--	--	--

260

QC	Memo	0.00							
----	------	------	--	--	--	--	--	--	--

Quality Control

Work Order ID 131497

Monday, April 13, 2015 7:53:33 AM

131497

Page 10

Item ID: D206-667-203RLC

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 4/13/2015 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270	Packaging	0.00							
270									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-667-203 Location: _____ PPP Rev: _____								
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

MLS

JUL 07 2015

Ø

Picklist Print

Monday, April 13, 2015 7:53:42 AM

Page 1

Work Order ID: 131497

131497

Parent Item: D206-667-203RLC

D206-667-203RLC

Parent Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015

Required Date: 4/13/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 14.09.24 NEW ISSUE II VERF:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D206-667-203TRN		Manufactured	No			220	Each	2.0000	1	1			

D206-667-203TRN

Crosstube Turning Detail

Location Loc Qty Loc Code

LG014

2

107547

1

96976

1

D2873-043

Manufactured No

220

Each

58.0000

2

2

BL 15/07/07

D2873-043

Nut Plate Assembly

Location Loc Qty Loc Code

LG

40

128814

40

LG052

18

127801

2

129732

16

D2873-045

Manufactured No

220

Each

31.0000

2

2

D2873-045

Nut Plate Assembly

Location Loc Qty Loc Code

LG052

31

125286

2

127534

19

128896

10

Picklist Print

Monday, April 13, 2015 7:53:42 AM

Page 2

Work Order ID: 131497

131497

Parent Item: D206-667-203RLC

D206-667-203RLC

Parent Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015

Required Date: 4/13/2015

Start Qty: 1.00

Required Qty: 1.00

D2892-1 Manufactured No

220 Each 12.0000 2 2

D2892-1

Support

Location

Loc Qty

Loc Code

LG052

12

115125

12

D3595-063-450 Manufactured No

220 Each 78.0000 4 4

D3595-063-450

Rubber Cushion 0.63" wide x 4.50" Long

Location

Loc Qty

Loc Code

FG

6

88422

6

LG050

50

131013

50

LG051

22

115780

11

129907

11

MS20601-AD4W10 Purchased No

220 Each 447.0000 14 14

MS20601-AD4W10

RIVET

Location

Loc Qty

Loc Code

LG050

347

M128594

46

M128701

300

M131367

1

LG051

100

131651

50

M131856

50

Monday, April 13, 2015 7:53:43 AM

Shop Packet Print

Page 2

Picklist Print

Monday, April 13, 2015 7:53:43 AM

Page 3

Work Order ID: 131497

131497

Parent Item: D206-667-203RLC

D206-667-203RI C

Parent Item Name: Aft Crosstube - High 206L / L1 / L3 / L4

Start Date: 4/13/2015

Required Date: 4/13/2015

Start Qty: 1.00

Required Qty: 1.00

MS21920-22

Purchased

No

220

Each

19.0000

4

4

MS21920-22

Clamp

Location

Loc Qty

Loc Code

LG050

19

M128636

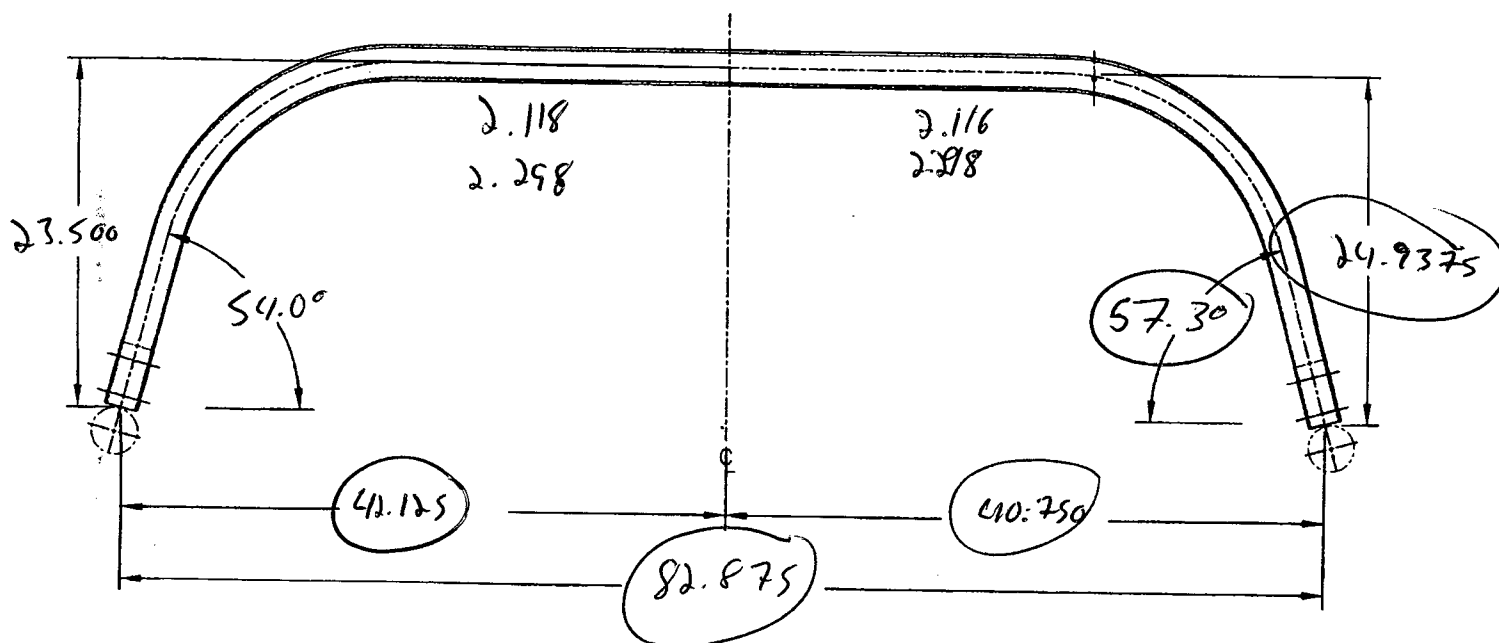
3

M130822

16

DART AEROSPACE LTD		Work Order:	131497
Description: Crosstube High Aft (206L)		Part Number:	D206-667-203
Inspection Dwg: D206-667-243 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.1
Bending Passes	8	--
Crushing	--	6%



	Side A	Side B
Bending Passes	14	14
Crushing	4%	9.1%
Comments		

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.17	Dwg Rev updated	KJ	
C	09.12.14	Dimensions update per Dwg Rev C	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	

Item	Qty	Part Number	Description
	-243		
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY.
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

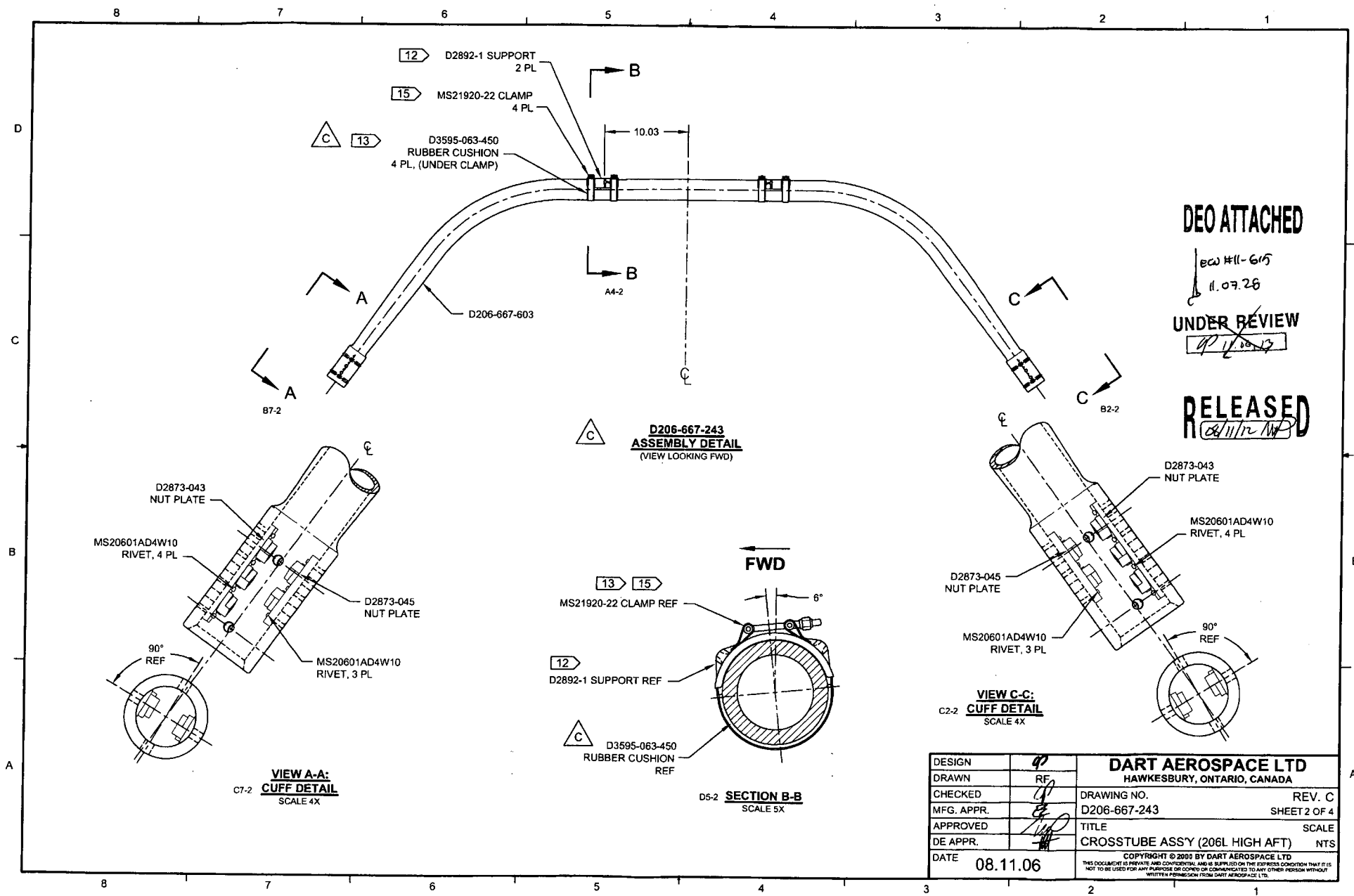
DEO ATTACHED

ECO #11-615
11.07.28

UNDER REVIEW

RELEASED
08/11/2006

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHTAA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	RF	D206-667-243	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE ASSY (206L HIGH AFT)	NTS
DE APPR.	RF	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR FOR ANY COMMUNICATION TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	08.11.06		



DEO ATTACHED

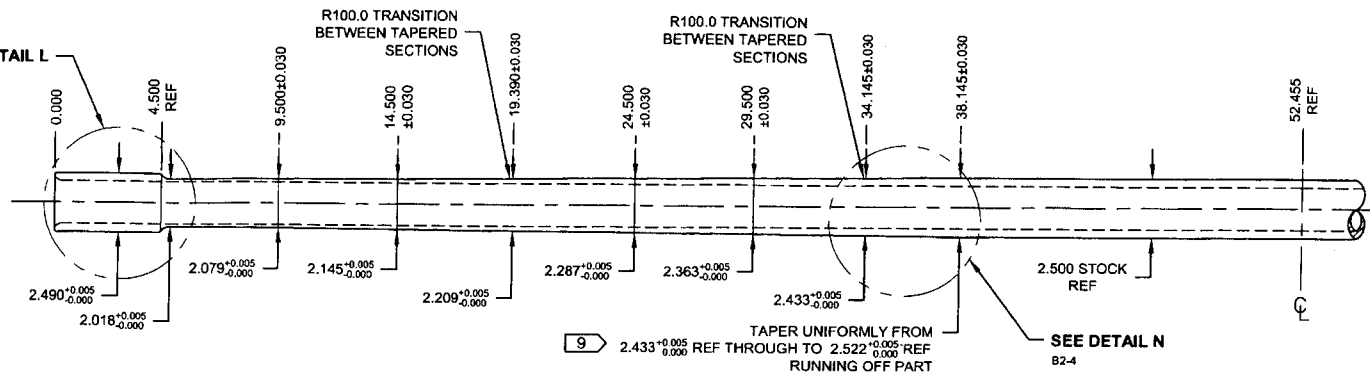
ECW #11-615
11.07.26

UNDER REVIEW

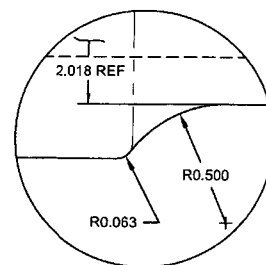
RELEASED
08/11/2006

DESIGN	40	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	40	DRAWING NO.	REV. C
MFG. APPR.	40	D206-667-243	SHEET 2 OF 4
APPROVED	40	TITLE	SCALE
DE APPR.	40	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

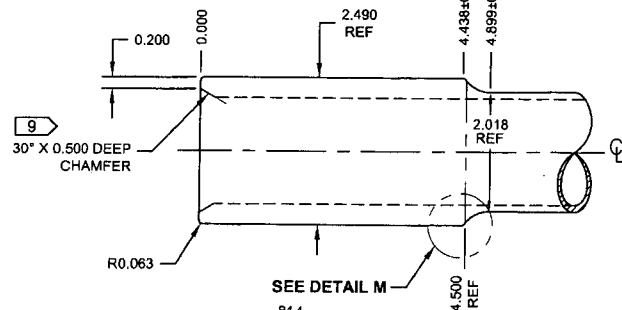
SEE DETAIL L
B7-4



TURNING DETAIL

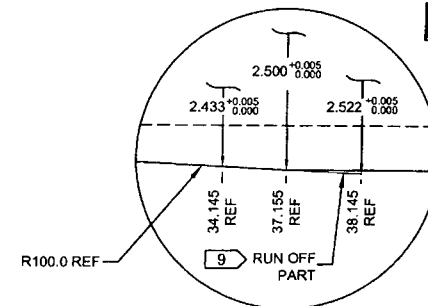


**DETAIL M:
CUFF TRANSITION**
NOT TO SCALE



DETAIL L: CROSSTUBE CUFF
NOT TO SCALE

SEE DETAIL N
B2-4



**DETAIL N:
TAPER RUN-OFF**
NOT TO SCALE

REV #11-615
11.07.28

UNDER REVIEW

DEO ATTACHED

RELEASED
08/11/2006

DESIGN	97	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-243	SHEET 4 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DRAWING NO. D206-667-243	TITLE CROSSTUBE ASS'Y (206L HIGH AFT)	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D206-667-243-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>JP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>RB</i>	APPROVED <i>MP</i>		DE APPR. <i>#</i>		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21		DATE 11.07.21		

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

Item	Qty -243	Part Number	Description
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2892-1 SUPPORT: ABRABE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-07-28
MP

DART SERVICE INSTRUCTION

TO AMEND INSTRUCTIONS FOR CONTINUOUS AIRWORTHINESS ICA-D206-667 Rev. 3 OR LATER

REF. CANADIAN STC: SH01-5

REF. FAA STC: SR01304NY

REF. EASA STC: EASA.IM.R.S.01179

PURPOSE:

The supports on the following crosstubes are now installed using Proseal instead of Magnobond:

D206-667-101 @ CHG 004
D206-667-103 @ CHG 005
D206-667-107 @ CHG 002
D206-667-201 @ CHG 004

D206-667-203 @ CHG 004
D206-667-207 @ CHG 002
D407-667-105 @ CHG 004

CHANGE:

For the crosstubes listed above, section 32.4 of ICA-D206-667 is amended as follows. Use Figures 32-4 to 32-8 of ICA-D206-667 for further reference. For crosstubes of an earlier change number, it is recommended that if the supports are removed, the supports should be reinstalled using the procedure listed below.

32.4 SUPPORT INSTALLATION

- 32.4.1 Locate the area on crosstube for installation of support (ref. Figures 32-4 to 32-8 of ICA-D206-667). For D206-667-101/-103/-107/-201 and D407-667-105 crosstubes, the outward face of the support tabs should be 13.08" (332mm) from the crosstube center. For D206-667-203/-207 crosstubes, the outward face of the support tabs should be 10.03" (255mm) from the crosstube center. Ensure paint finish of crosstube is intact; touch up as required per Chapter 5 (5.3.9) of ICA-D206-667.
- 32.4.2 If present, remove any paint/primer on bottom of supports. Abrade mating surfaces of support and crosstube with 400-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.3 Ensure a layer of 3M Scotch-Weld 2216 B/A Epoxy Adhesive is on the bottom of the support. If required, either apply or touch-up support to have a 0.03" to 0.05" thick layer of adhesive over the entire mating surface. Allow supports to cure for 24 hours.
- 32.4.4 Abrade mating surfaces of support (after cure) and crosstube with 180-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.5 Apply a 0.04" to 0.07" thick layer of Proseal 890 Class B or AMS-S-8802 Class B sealant underneath applicable support and install support.
- 32.4.6 Install the clamps opposite to crosstube support as shown in Figures 32-4 to 32-8 of ICA-D206-667. Install rubber cushions underneath each clamp around the bottom circumference of the crosstube up to the crosstube centerline. Torque clamps 80-100 in-lb (9.0-11.3 Nm). It is acceptable to use smaller or larger sized MS21920-XX clamps than those listed in ICA-D206-667, ensure that after torquing the clamps per this instruction, the nuts are in safety but not bottomed out.
- 32.4.7 Prior to installing crosstube on aircraft, allow supports to cure for 72 hours and recheck torque on clamps.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 11.07.20
CERT. NO.: SH01-5
ISSUE NO.: 3

A	NEW ISSUE	CP	11.07.15
REV.	DESCRIPTION	BY	DATE
DESIGN	92	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	92		
CHECKED	ASS	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9565	SHEET 1 OF 1
APPROVED		TITLE	SCALE
DE APPR.		SUPPORT INSTALLATION CHANGE	NTS
DATE	11.07.15	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

June 17th 08

Batch:

D206-667-203 Folio

2.5 Rollers w/1.6" shim underneath X 3

3.125" Shim in buggy A

All programs run with long end of tube on **large table**.

Tube should be marked @

19.375" from cuff

37" RED from cuff

then centerline 52.4375" ish...

First Step - Approach Y @ 3290 and 1500 on W.

Run programs 206a 1-2-3-4 from **37 line**.

Program 4 stops at 19.375 line. Program 10 will start at that line, then all other programs return to that spot. Run 10-14 without stopping, Flip, Then Repeat same operations for second side. Then check.

Second step - Approach Y @ 3340 & 3440 on W

Run program 15 - 25 as needed.

NOTES:

October 14, 2010 - ran 19, 19c,e, then 20 to get 41.98 @ 23.6 for height. Tube was even. another tube finished at program 25.

Jan 7-11 Ran 2 tubes, tubes were to high. Changed tangent line from 19.5 to 19.375 check next time around. Both tubes were still ok. tubes finished with program 15.

june 6-11 Ran program 15, 15a, 15b and 19 (checked each time program was run on both side) with tangent line change at 37 and tangent line 19.375, with the changes tube was ok. 1/2 span was 41.937 and 41.960. height was 23.625 on both sides. and angles of 54.4 and 54.6

sept 28/11 after prog 14 we were 1" away. ran 15, skipped 15 a and b, ran 19. still 3/4" away 15 a and b are obsolete. jw

13-02-27 program 19d under revision, one line backs up by 45 points for no apparent reason.

Passes:

~~1~~
~~2~~
~~3~~
~~4~~
~~10~~
~~11~~
~~12~~
~~13~~
~~14~~
15
15A
15B
19
19A
19B

~~1~~
~~2~~
~~3~~
~~4~~
~~10~~
~~11~~
~~12~~
~~13~~
~~14~~
15
15A
15B
19
19A
19B